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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/120,126	07/22/1998	LAURENCE EDWARD BAYS	BAYS7-19-1-2	1847

7590 12/17/2002

FARKAS AND MANELLI
2000 M STREET NW 7TH FLOOR
WASHINGTON, DC 200363307

EXAMINER

MCLEAN MAYO, KIMBERLY N

ART UNIT	PAPER NUMBER
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2187

DATE MAILED: 12/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/120,126

Applicant(s)

BAYS ET AL.

Examiner

Kimberly N. McLean-Mayo

Art Unit

2187

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. The enclosed detailed action is in response to the After-Final Amendment submitted on November 13, 2001.

Response to Amendment

2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-8, 10-16 and 20-21 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1, 7, 13 and 20 recite the limitation "a second agent lacking a dedicated clock". There is no support in the specification for this limitation.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claims 18-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 18 and 19 recite the limitation "said first memory access clock signal" in Lines 3-4 and Line 3 respectively. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 17-19 and 22 rejected under 35 U.S.C. 102(b) as being anticipated by Persaud (GBPN: 2074762).

Regarding claims 17-19, Persaud discloses providing a single memory access clock signal

(bus/master continuous 02 signal) from a first agent (**claim 19**; Page 3, Lines 15-17, Page 5, Lines 2-4; first agent is comprised of master processor/clock generator; Figure 4, Reference (s) 76, 78,126);

providing a presentation of the single memory access clock signal (*slave continuous 02 signal*) in synchronism with the single memory access clock (Page 2, Lines 45-47, Lines 52-55; Page 5, Line 2, Lines 26-33; Figure 1 shows the Continuous 02 signal output on line 46 from Reference 78; Page 5, Line 2, Lines 16-33; Page 6, Line 6-51; Figures 9A-9D and 10; Page 6, Lines 46-65; Page 7, entirety; Page 8, Lines 1-22, Lines 34-46 - Persaud teaches that all of the mpu 02 signals are synchronized to each other. The Bus Continuous 02 signal and the slave continuous

02 are the same signals as the master mpu 02 signal and the slave mpu 02 signal respectively. The master mpu 02 signal and the slave mpu 02 signals are synchronized to each other and thus so is the slave continuous 02 signal and the bus/master continuous 02 signal);

regenerating in a second agent (one of the slave processors/clock generator; Figure 4, Reference(s) 76, 78, 126 located in Reference 14 in Figure 3; Page 4, Lines 5-10; Page 1, Line 42) the first memory access clock signal (claim 18 - Page 5, L 2, L 16-33; Page 6, L 6-51; Figures 9A-9D and 10; Page 6, L 46-65; Page 7, entire; Page 8, L 1-22, L 34-46);

firstly accessing a portion (part of the shared memory corresponding to an address of a memory request by the master processor) of the external non-dedicated shared memory (comprised of one of the slave memories; Page 1, Lines 44-45) from the first agent based on the single memory access clock signal (Page 1, L 44-45; Page 2, Lines 1-7; Pages 9-10 with respect to Figure 11; Page 11, 49-58; Page 12, Lines 1-19);

secondly accessing a portion (part of the shared memory corresponding to an address of a memory request by the slave processor) of the external non-dedicated shared memory from a second agent based on the representation (regenerated) of the single memory access clock signal received from the first agent (Page 1, L 44-45; Pages 9-10 with respect to Figure 11- The slave Continuous 02 signal is used to generate the CAS and RAS signals (refer to Figures 1 and 2) which are used to access the shared memory (Figure 5, Reference 190 located on one of the slave cards), therefore the Continuous 02 signal is used to access the memory. The continuous 02 signal is generated based on the bus continuous 02 and therefore, the first agent memory access is based on the memory access clock);

wherein the step of secondly accessing the external non-dedicated shared memory follows the step of firstly accessing without a wait state there between (Page 1, Lines 46-49; Page 3, Lines 47-61; Persaud teaches that the slave processor is inhibited from accessing the shared memory only during the clock cycle(s) in which time the master is accessing the shared memory, which

means that the slave accesses the shared memory immediately after the master. Hence no wait states are used or required).

Additionally, the shared memory is located externally to the agent and it is not used as a dedicated (unshared, private) memory because it is shared between the two agents.

Regarding claim 22, Persaud discloses means for providing a memory access clock signal (*bus/master continuous 02 signal, Page 3, Lines 15-17, Page 5, Lines 2-4; first agent is comprised of master processor/clock generator; Figure 4, Reference (s) 76, 78,126*); means for firstly accessing the shared memory from a first agent based on the memory access clocking signal (*Page 1, L 44-45; Page 2, Lines 1-7; Pages 9-10 with respect to Figure 11; Page 11, 49-58; Page 12, Lines 1-19*); means for secondly accessing the shared memory from a second agent based on the memory access clock signal (*Page 1, L 44-45; Pages 9-10 with respect to Figure 11- The slave Continuous 02 signal is used to generate the CAS and RAS signals (refer to Figures 1 and 2) which are used to access the shared memory (Figure 5, Reference 190 located on one of the slave cards), therefore the Continuous 02 signal is used to access the memory. The continuous 02 signal is generated based on the bus continuous 02 and therefore, the first agent memory access is based on the memory access clock*); wherein the means for second accessing accesses the shared memory without a wait state after the means for firstly accessing the shared memory (*page 1, Lines 46-49; Page 3, Lines 47-61; Persaud teaches that the slave processor is inhibited from accessing the shared memory only during the clock cycle(s) in which time the master is accessing the shared memory, which means that the slave accesses the shared memory immediately after the master. Hence no wait states are used or required*).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. (USPN: 5,659,715).

Regarding claim 23, Wu discloses setting a configuration register to partition the external non-dedicated shared memory into a first partition and a second partition (*C 9, L 23-59; C 10, L 1-30; partitions- address ranges allocated to the graphics and system controllers; register - storage which stores the address ranges assigned to the system controller and the graphics controller*); accessing a first portion of memory from a first agent (*graphics controller - C 4, L 58-65*); accessing a second portion of memory from a second agent (*system controller - C 4, L 58-65*); and repartitioning the shared memory on the fly (*C 7, L 11-23*). Wu does not disclose the external shared memory partitions comprising a plurality of memory banks. However, official notice is taken that memory comprising a plurality of banks (modules) is well known in the art, particular for providing a large storage capacity. Wu teaches the concept of dynamically allocating portions of a memory bank to a first and second agent such that the performance of the memory is improved. Thus, it would have been obvious to one of ordinary skill in the art to add a plurality of banks to the system taught by Wu for the desirable purpose of increasing the storage space to provide the storage capacity required for a system's design requirements.

Response to Arguments

12. Applicant's arguments filed with respect to claims 17-19 have been fully considered but they are not persuasive.

Persaud's bus/master continuous 02 signal is a single memory access clocking signal.

Applicant's arguments with respect to claims 1-16 and 20-21 have been considered but are moot in view of the new ground(s) of rejection.

Regarding Applicant's argument regarding claim 22, it should be noted that claim 22 does not state "a single memory access clock signal".

Regarding Applicant's argument regarding claim 23, it should be noted that claim 23 does not state "a second agent that lacks dedicated clock".

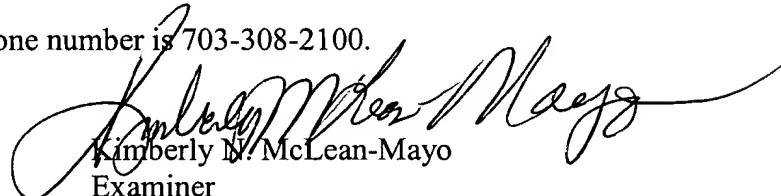
Regarding Applicant's argument that Persaud's memory clock signals are received from local clocks; it is not clear what relevance this has with respect to the claim language. The claim language states that the second agent receives a memory access clock signal and provides a clock signal representation of the memory access clock. The slave clock signal is a clock signal representation of the memory access clock signal.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly N. McLean-Mayo whose telephone number is 703-308-9592. The examiner can normally be reached on M-F (9:00 - 6:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Do Yoo can be reached on 703-308-4908. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7329 for regular communications and 703-746-7240 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-2100.


Kimberly N. McLean-Mayo
Examiner
Art Unit 2187

KNM

December 13, 2002